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SONY

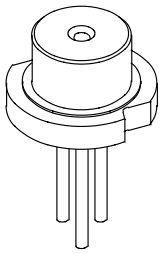
SLD1134VL

650nm Pulsation Red Laser Diode

Description

The SLD1134VL is a pulsation red laser diode designed for DVD systems.

M-274



Features

- Low noise
- Standard package (ϕ5.6mm)

Application

DVD

Structure

- AlGaInP quantum well-structure laser diode
- PIN photo diode for optical power output monitor

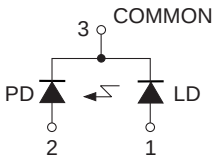
Recommended Optical Power Output

4mW

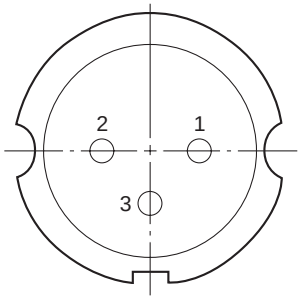
Absolute Maximum Ratings (Tc = 25°C)

• Optical power output	Po		5	mW
• Reverse voltage	V_R	LD	2	V
		PD	20	V
• Operating temperature	Topr		–10 to +70	°C
• Storage temperature	Tstg		–40 to +85	°C

Connection Diagram



Pin Configuration



Bottom View

1. LD Anode
2. PD Anode
3. Common

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E98Y11-PS

Electrical and Optical Characteristics Tc: Case temperature

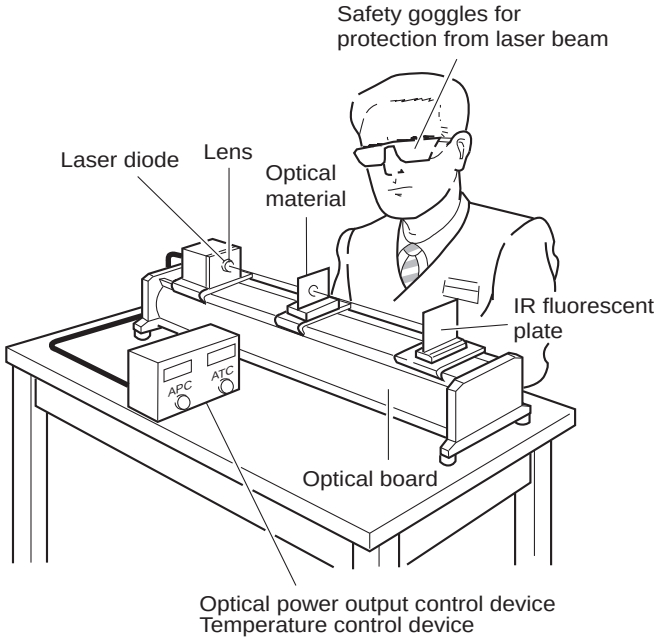
Item		Symbol	Conditions	Min.	Typ.	Max.	Unit
Threshold current		Ith			65	80	mA
Operating current		Iop1	P_O = 4mW		75	90	mA
		Iop2 *1				120	mA
Operating voltage		Vop	P_O = 4mW		2.3	2.8	V
Wavelength		λp	P_O = 4mW	640	655	660	nm
Radiation Angle	Perpendicular	θ⊥	P_O = 4mW	25	35	40	degree
	Parallel	θ//		7	8.5	12	degree
Positional accuracy	Position	ΔX, ΔY, ΔZ	P_O = 4mW			±80	µm
	Angle	Δϕ//				±2	degree
		Δϕ⊥				±3	degree
Differential efficiency		η_D	P_O = 4mW	0.15	0.4	0.7	mW/mA
Astigmatism		A_S	P_O = 4mW		10		µm
Monitor current		Imon	P_O = 4mW VR = 5V	0.05	0.1	0.25	mA

*1 Tc = 70°C

Handling Precautions

(1) Eye protection against laser beams

The optical output of laser diodes ranges from several mW to 4W. However the optical power density of the laser beam at the diode chip reaches 1MW/cm^2. Unlike gas lasers, since laser diode beams are divergent, uncollimated laser diode beams are fairly safe at a laser diode. For observing laser beams, ALWAYS use safety goggles that block infrared rays. Usage of IR scopes, IR cameras and fluorescent plates is also recommended for monitoring laser beams safely.

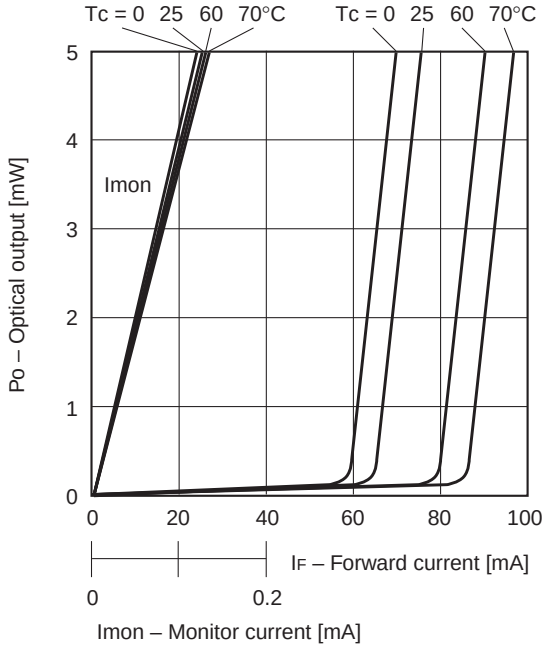


(2) Prevention of surge current and electrostatic discharge

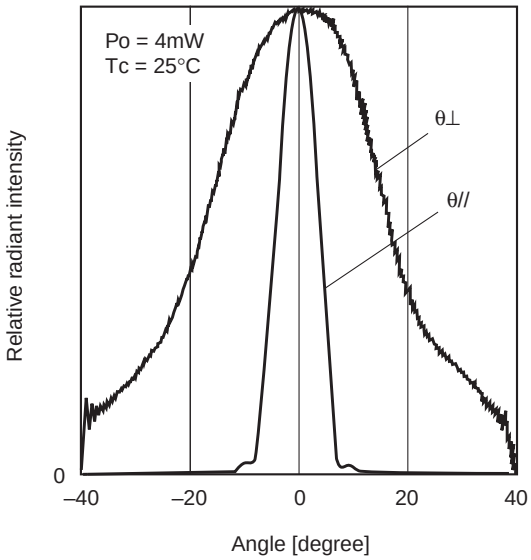
Laser diode is most sensitive to electrostatic discharge among semiconductors. When a large current is passed through the laser diode even for an extremely short time (in the order of nanosecond), the strong light emitted from the laser diode promotes deterioration and then laser diodes are destroyed. Therefore, note that the surge current should not flow the laser diode driving circuit from switches and others. Also, if the laser diode is handled carelessly, it may be destructed instantly because electrostatic discharge is easily applied by a human body. Be great careful about excess current and electrostatic discharge.

Example of Representative Characteristics

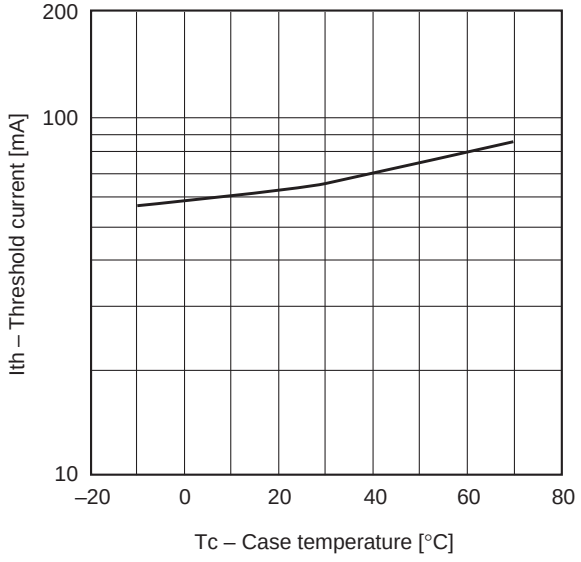
Optical power output vs. Forward current characteristics
Optical power output vs. Monitor current characteristics



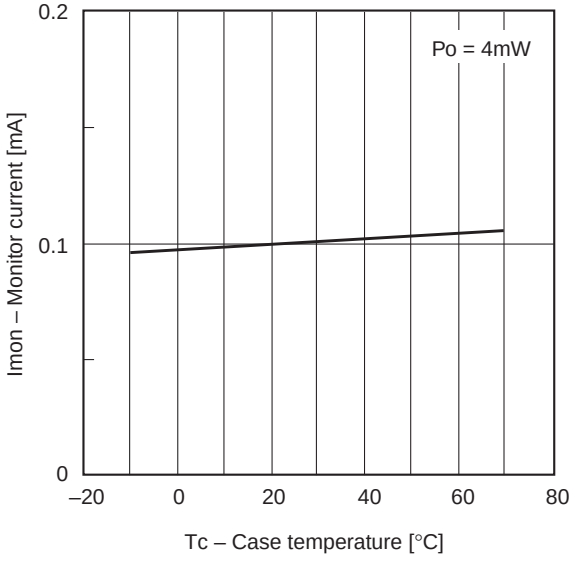
Far field pattern (FFP)



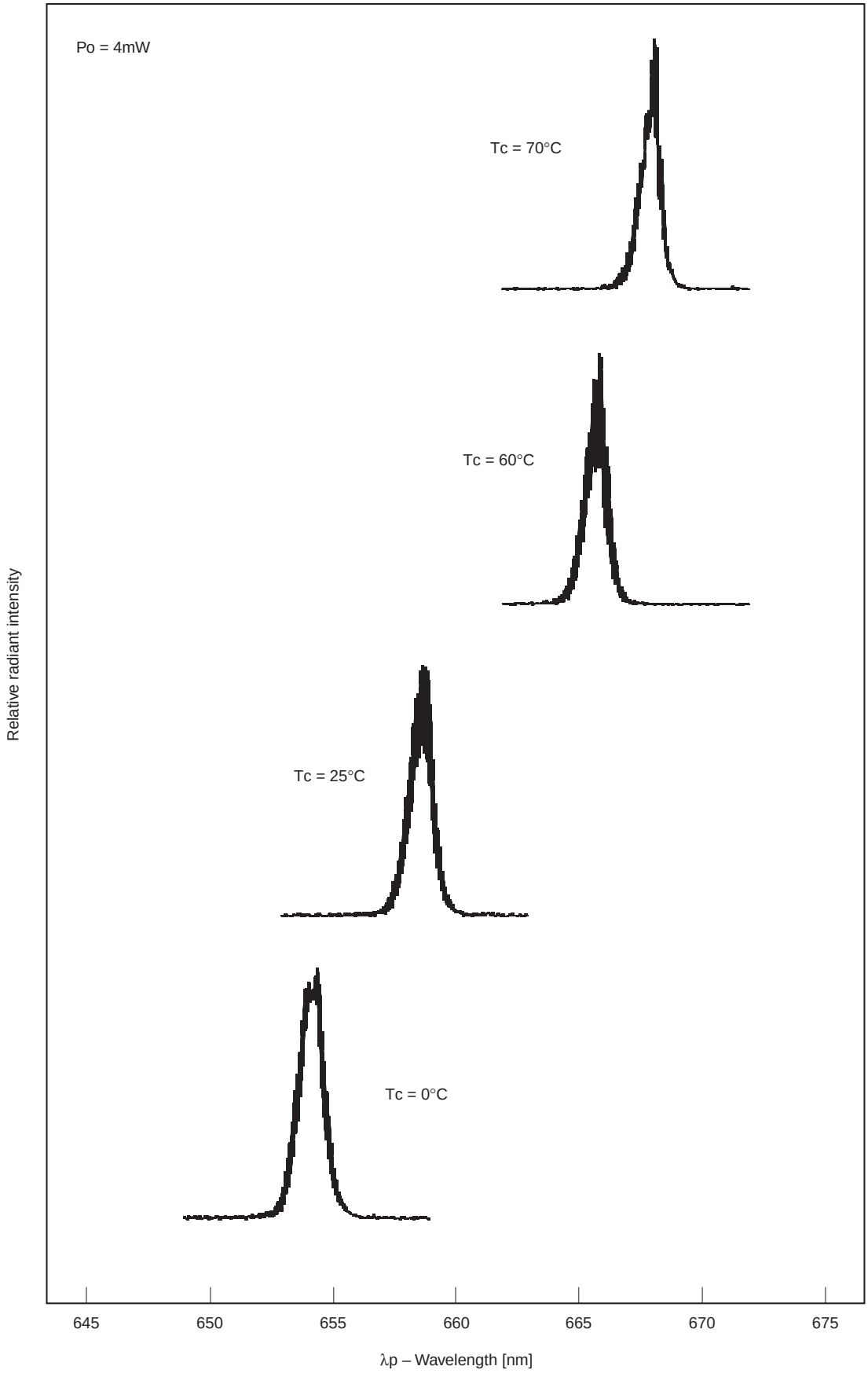
Threshold current vs. Temperature characteristics



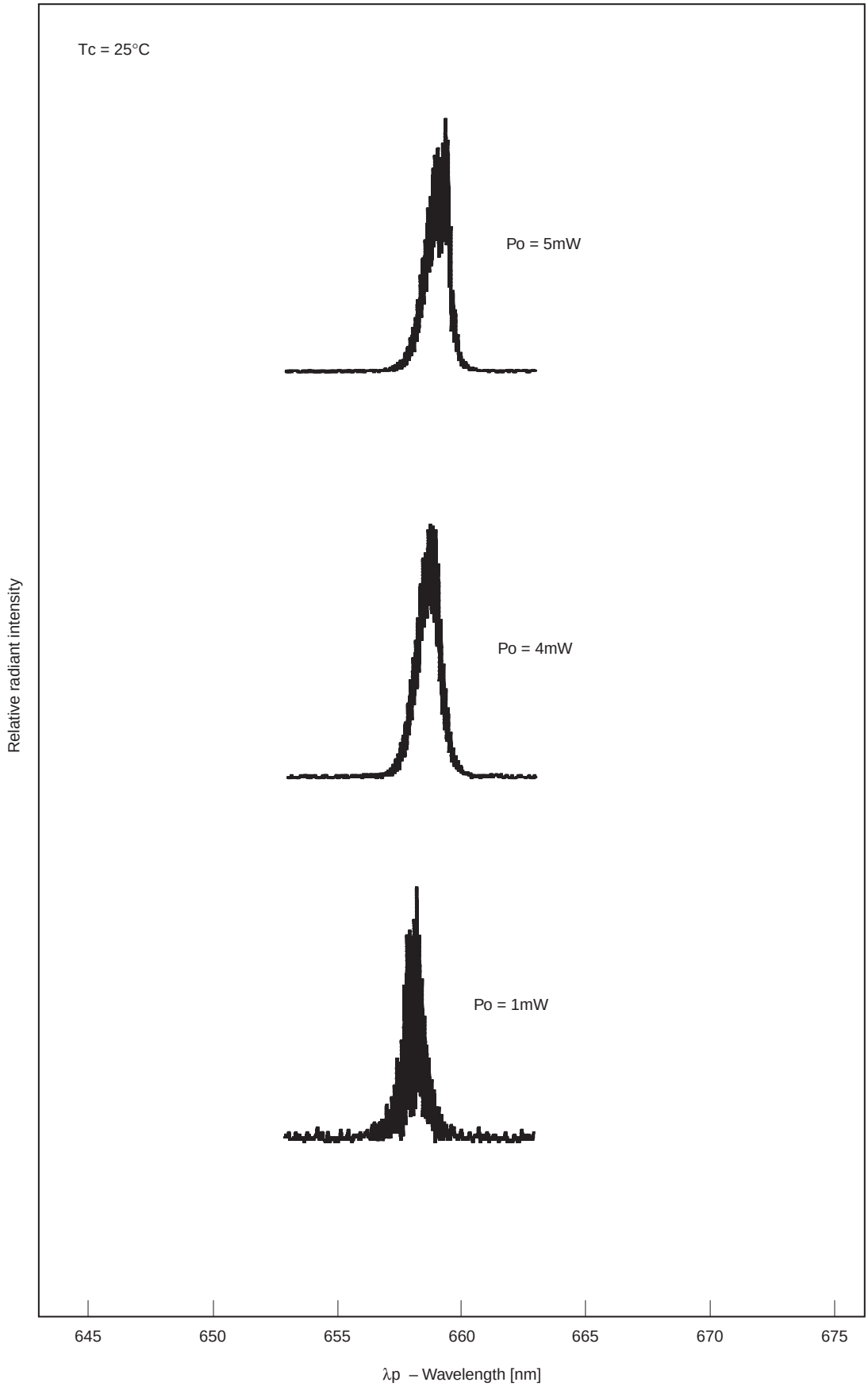
Monitor current vs. Temperature characteristics



Temperature dependence of spectrum



Power output dependence of spectrum



Package Outline Unit: mm

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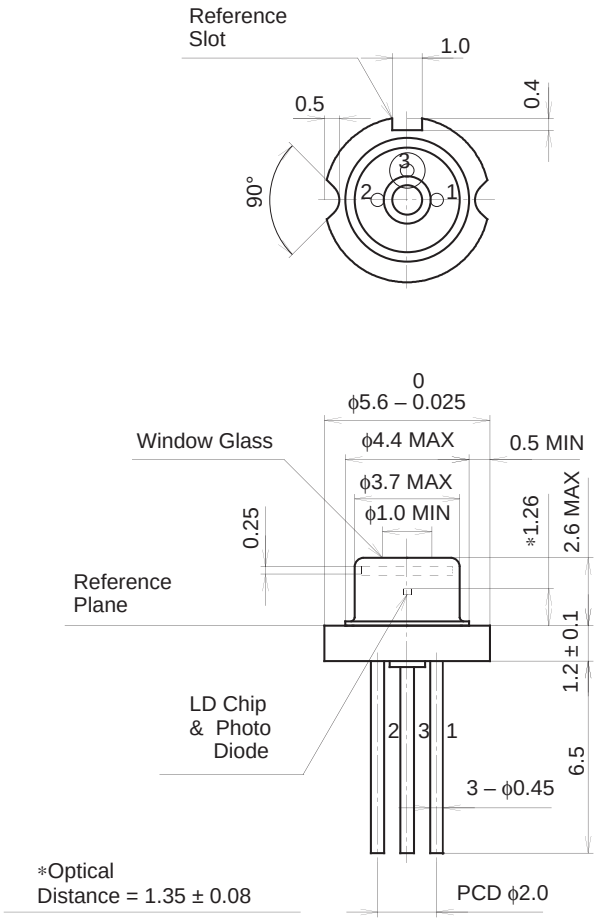

SONY CODE	M-274
EIAJ CODE	————
JEDEC CODE	————

PACKAGE WEIGHT	0.3g